134717-1
(GP2-0323)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant:	Jiawen Dong et al.	)
		) Group Art Unit: 1791
Serial No.:	10/648,540	)
		) Confirmation No: 4671
Filed:	August 26, 2003	)
		) Examiner: Monica A. Huson
For:	METHOD OF MOLDING ARTICLES	)

Via Electronic Filing
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY BRIEF

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is SABIC Innovative Plastics IP B.V. who purchased this application from General Electric Company in August 2007.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences known to Appellants, Appellants' legal representatives, or assignee that will directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF THE CLAIMS

Claims 1, 3 – 6, 8, 10 – 21, 23, 24, and 27 – 32 are pending in the application.

Claims 1, 3 – 6, 8, 10 – 21, 23, 24, and 27 – 32 stand finally rejected. No claims stand objected to, withdrawn, or allowed.

Claims 2, 7, 9, 22, and 25-26 have been cancelled.

Claims 1, 3 – 6, 8, 10 – 21, 23, 24, and 27 – 32 as they currently stand, are set forth in Appendix A. Appellants hereby appeal the final rejection of Claims 1, 3 – 6, 8, 10 – 21, 23, 24, and 27 – 32.

IV. STATUS OF THE AMENDMENTS

No amendments have been filed subsequent to the Final Rejection dated February 11, 2008. All prior amendments have been entered.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Claim 1 is directed to a method of molding a disk that comprises injection molding a polymeric material (Supported at least at p. 8, line 1) at a melt temperature of about 330 to about 370°C (Supported at least on p. 8, line 3) into a mold (Supported at least on p. 3, line 9) having a mold temperature of about 90 to about 130°C (Supported at least on p. 8, line 8) and a clamp tonnage of about 12 to about 35 tons (Supported at least on p. 8, line 14) to form a disk (Supported at least on p. 8, line 2); wherein the polymeric material comprises poly(arylene ether) and poly(alkenyl aromatic) (Supported at least on p. 9, lines 9-10); wherein the disk exhibits a

percent feature replication of greater than or equal to about 90 percent (Supported at least on p. 7, line 23); and wherein a disk assembly fabricated from the disk exhibits a radial tilt change value after 96 hours at 80°C of less than or equal to about 0.35 degree (Supported at least on p. 7, lines 29-30) measured at a radius of 55 millimeters (Supported at least on p. 7, line 28).

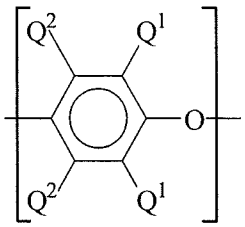
Claim 3 is directed to the method of claim 1, wherein a disk assembly fabricated from the disk exhibits a radial tilt change value after 96 hours at 80°C of less than or equal to about 0.15 degree measured at a radius of 55 millimeters. (Supported at least on p. 6, lines 26 – 28)

Claim 4 is directed to the method of claim 1, wherein the melt temperature is of about 340 to about 360°C. (Supported at least on p. 8, lines 3 – 7).

Claim 5 is directed to the method of claim 1, wherein the mold temperature is of about 100 to about 120°C. (Supported at least on p. 8, lines 8 – 12).

Claim 6 is directed to the method of Claim 1, wherein the clamp tonnage is of about 15 to about 30 tons. (Supported at least on p. 8, lines 15 – 17)

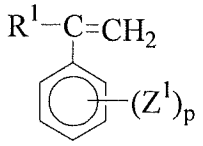
Claim 10 is directed to the method of Claim 1, wherein the poly(arylene ether) comprises a plurality of structural units of the structure



wherein for each structural unit, each Q^1 is independently halogen, primary or secondary C_1-C_7 alkyl, phenyl, haloalkyl, aminoalkyl, hydrocarbonoxy, or halohydrocarbonoxy wherein at least two carbon atoms separate the halogen and oxygen atoms; and each Q^2 is independently hydrogen, halogen, primary or secondary lower alkyl, phenyl, haloalkyl, hydrocarbonoxy, or halohydrocarbonoxy wherein at least two carbon atoms separate the halogen and oxygen atoms. (Supported at least on p. 9, line 19 to p. 10, line 1)

Claim 11 is directed to the method of Claim 1, wherein the poly(arylene ether) has an intrinsic viscosity of about 0.10 to about 0.60 deciliters per gram as measured in chloroform at 25°C. (Supported at least on p. 10, lines 23-24)

Claim 12 is directed to the method of Claim 1, wherein the poly(alkenyl aromatic) contains at least 25% by weight of structural units derived from an alkenyl aromatic monomer of the formula



wherein R^1 is hydrogen, C_1-C_8 alkyl, or halogen; Z^1 is vinyl, halogen or C_1-C_8 alkyl; and p is 0 to 5. (Supported at least on p. 13, lines 1-4)

Claim 13 is directed to the method of Claim 1, wherein the poly(alkenyl aromatic) is atactic crystal polystyrene. (Supported at least on p. 14, lines 15-19)

Claim 14 is directed to the method of Claim 1, wherein the poly(arylene ether) is present in the polymeric material in an amount of about 60 to about 40 percent by weight and the poly(alkenyl aromatic) is present in the polymeric material in an amount of about 40 to about 60 percent by weight based on the total weight of the poly(arylene ether) and the poly(alkenyl aromatic). (Supported at least on p. 15, lines 1 and 4)

Claim 17 is directed to a method of molding a disk that comprises injection molding a polymeric material (Supported at least at p. 8, line 1) at a melt temperature of about 330 to about 370°C (Supported at least on p. 8, line 3) into mold (Supported at least on p. 3, line 9) having a mold temperature of about 90 to about 130°C (Supported at least on p. 8, line 8) and a clamp tonnage of about 12 to about 35 tons (Supported at least on p. 8, line 14) to form a disk (Supported at least on p. 8, line 2), wherein the polymeric material comprises poly(2,6-dimethyl-1,4-phenylene oxide) (Supported at least on p. 10, line 16) and polystyrene (Supported at least on p. 12, line 26 and p. 13, line 4); wherein a disk assembly fabricated from the disk exhibits a radial tilt change value after 96 hours at 80°C of less than or equal to about 0.35 degree (Supported at least on p. 7, lines 29-30) measured at a radius of 55 millimeters (Supported at least on p. 7, line 28); and wherein the disk exhibits a percent feature replication of greater than or equal to about 90 percent (Supported at least on p. 7, line 23).

Claim 18 is directed to a method of molding a disk comprises: injection molding a polymeric material (Supported at least at p. 8, line 1) to form disks (Supported at least on p. 4, line 28) according to a molding model (Supported at least on p. 4, lines 28-29) comprising

molding parameters (Supported at least on p. 4, line 29) and molding parameter values (Supported at least on p. 5, line 1); testing disk assemblies fabricated from the disks for radial tilt change (Supported at least on p. 6, line 23); creating an updated molding model (Supported at least on p. 7, line 1) based on the molding parameter values that resulted in disk assemblies fabricated from the disks having a radial tilt change within a selected range of values (Supported at least on p. 7, line 2); and repeating the molding, testing and creating steps to form final disks and a final molding model (Supported at least on p. 7, lines 17-18); testing the disks for percent feature replication (Supported at least on p. 6, line 19); creating the updated molding model based on the molding parameter values that resulted in disks exhibiting a percent feature replication within a selected range of values (Supported at least on p. 7, lines 1-3); and repeating the molding, testing and creating steps (Supported at least on p. 7, line 17) until the final disks exhibit a percent feature replication of greater than or equal to about 90 percent (Supported at least on p. 7, line 23), wherein disk assemblies fabricated from the final disks exhibit a radial tilt change value after aging of less than or equal to about 0.35 degree measured at a radius of 55 millimeters (Supported at least on p. 7, lines 28-30); and wherein the polymeric material comprises poly(arylene ether) and poly(alkenyl aromatic) (Supported at least on p. 9, lines 9-10).

Claim 19 is directed to the method of claim 18, wherein the testing comprises aging the disk assemblies at 80°C for 96 hours. (Supported at least on p.69, lines 26 – 27).

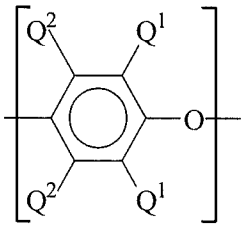
Claim 20 is directed to the method of claim 18, wherein the disk assemblies fabricated from the final disks exhibit a radial tilt change value after 96 hours at 80°C of less than or equal to about 0.35 degree measured at a radius of 55 millimeters. (Supported at least on p. 7, lines 29 - 31).

Claim 21 is directed to the method of claim 18, wherein the disk assemblies fabricated from the final disks exhibit a radial tilt change value after 96 hours at 80°C of less than or equal to about 0.15 degree measured at a radius of 55 millimeters. (Supported at least on p. 7, lines 29 - 31).

Claim 23 is directed to the method of claim 18, wherein the final disks exhibit a percent feature replication of greater than or equal to about 95%. (Supported at least on p. 7, lines 22 – 26, and in the examples).

Claim 24 is directed to the method of claim 18, wherein the molding parameters are melt temperature, mold temperature, clamp tonnage, hold pressure, cool time, or a combination thereof. (Supported at least on p. 5, line 14 to p. 4, line 12).

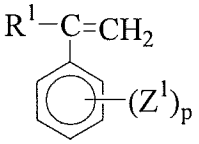
Claim 27 is directed to the method of Claim 18, wherein the poly(arylene ether) comprises a plurality of structural units of the structure



wherein for each structural unit, each Q^1 is independently halogen, primary or secondary C_1-C_7 alkyl, phenyl, haloalkyl, aminoalkyl, hydrocarbonoxy, or halohydrocarbonoxy wherein at least two carbon atoms separate the halogen and oxygen atoms; and each Q^2 is independently hydrogen, halogen, primary or secondary lower alkyl, phenyl, haloalkyl, hydrocarbonoxy, or halohydrocarbonoxy wherein at least two carbon atoms separate the halogen and oxygen atoms. (Supported at least on p. 9, line 19 to p. 20, line 1)

Claim 28 is directed to the method of Claim 18, wherein the poly(arylene ether) has an intrinsic viscosity of about 0.10 to about 0.60 deciliters per gram as measured in chloroform at 25°C. (Supported at least on p. 10, lines 23-24)

Claim 29 is directed to the method of Claim 18, wherein the poly(alkenyl aromatic) contains at least 25% by weight of structural units derived from an alkenyl aromatic monomer of the formula



wherein R^1 is hydrogen, C_1-C_8 alkyl, or halogen; Z^1 is vinyl, halogen or C_1-C_8 alkyl; and p is 0 to 5. (Supported at least on p. 13, lines 1-5)

Claim 30 is directed to the method of Claim 18, wherein the poly(arylene ether) is present in the polymeric material in an amount of about 90 to about 10 percent by weight and the

poly(alkenyl aromatic) is present in the polymeric material in an amount of about 10 to about 90 percent by weight based on the total weight of the poly(arylene ether) and the poly(alkenyl aromatic). (Supported at least by Claim 30 as originally filed)

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. **Whether Claims 1, 3 - 6, and 15 - 17 are obvious, under 35 U.S.C. § 103(a), over U.S. Patent Application Publication No. 2002/0048691 to Davis et al. ("Davis"), in view of Rosato's Injection Molding Handbook (3rd ed.) ("Rosato"), Japanese Patent 10-306268 to Toshihiko et al. ("Toshihiko"), and U.S. Patent 5,145,877 to Bopp et al. ("Bopp")?**

B. **Whether Claims 18 - 20, 23, 24, 31, and 32 are obvious, under 35 U.S.C. § 103(a), over Davis, Rosato, Toshihiko, and Bopp, further in view of U.S. Patent 5,525,645 to Ohkawa et al. ("Ohkawa")?**

C. **Whether Claims 10 and 14 are obvious, under 35 U.S.C. § 103(a), over Davis, Rosato, Bopp, and Toshihiko, further in view of U.S. Patent Application Publication No. 2002/0137840 to Adedeji et al. ("Adedeji")?**

D. **Whether Claim 11 is obvious, under 35 U.S.C. § 103(a), over Davis, Rosato, Bopp, and Toshihiko, further in view of U.S. Patent 6,306,953 to Fortuyn et al. ("Fortuyn")?**

E. **Whether Claim 12 is obvious, under 35 U.S.C. § 103(a), over Davis, Rosato, Bopp, and Toshihiko, further in view of U.S. Patent 4,727,093 to Allen et al. ("Allen")?**

F. **Whether Claim 13 is obvious, under 35 U.S.C. § 103(a), over Davis, Rosato, Bopp, and Toshihiko, further in view of U.S. Patent 5,872,201 to Cheung et al. ("Cheung")?**

G. **Whether Claim 27 is obvious, under 35 U.S.C. § 103(a), over Davis, Rosato, Bopp, Toshihiko, and Ohkawa, further in view of U.S. Patent 6,407,200 to Singh et al. ("Singh")?**

H. **Whether Claim 28 is obvious, under 35 U.S.C. § 103(a), over Davis, Rosato, Bopp, Toshihiko, and Ohkawa, further in view of Fortuyn?**

I. **Whether Claim 29 is obvious, under 35 U.S.C. § 103(a), over Davis, Rosato, Bopp, Toshihiko, and Ohkawa, further in view of Allen?**

J. Whether Claim 30 is obvious, under 35 U.S.C. § 103(a), over Davis, Rosato, Bopp, Toshihiko, and Ohkawa, further in view of Adedeji?

VII. ARGUMENT

A. CLAIMS 1, 3 - 6, AND 15 - 17 ARE NON-OBVIOUS OVER DAVIS IN VIEW OF ROSATO, TOSHIHIKO, AND BOPP.

In the Final Office Action the Examiner alleges Davis discloses injection molding and admits Davis does not disclose clamp tonnage or temperature requirements for molding. (Office Action dated 02/11/08, page 2) In addition the Examiner asserts Bopp teaches "a method wherein injection molding of polyphenylene oxide...and polystyrene...is carried out, wherein the material melt temperature is 328C and the mold temperature is 135C (Column 8, lines 23-44)." (Office Action dated 02/11/08, page 2)

The Examiner states it would have been obvious "to choose a clamp tonnage such as Rosato discloses during Davis' molding process" and "to use Toshihiko's radial tilt measuring parameters during Davis' molding method" and "to use Bopp's suggested temperatures during the molding process of Davis". (Office Action dated 02/11/08, pages 2-3)

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art; that the prior art relied upon, or knowledge generally available in the art at the time of the invention, must provide some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). "A patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007). To find obviousness, the Examiner must "identify a reason that would have prompted a person of ordinary skill in the art in the relevant field to combine the elements in the way the claimed new invention does." *Id.* In view of the following remarks, the Office action does not establish a *prima facie* case of obviousness.

Claims 1 and 17 claim a method of molding a disk, comprising **injection molding** a polymeric material at a melt temperature of about 330 to about 370°C **into a mold** having a mold

temperature of about 90 to about 130°C and a clamp tonnage of about 12 to about 35 tons to form a disk.

The Examiner states Bopp was cited to show the temperature limitation and that Davis was cited to show injection molding. (Office Action dated 02/11/2008, p. 9) Appellants respectfully assert that because Bopp does not teach a melt temperature for **injection molding into a mold**, or an injection molding mold temperature, one of ordinary skill in the art would not have been prompted to consider the teachings of Bopp as applicable to injection molding, let alone combine Bopp and Davis to modify the process taught by Davis, as is asserted by the Examiner.

Bopp discloses **melt compounding** using a conventional **extruder** apparatus. (Bopp, col. 2, lines 55 and 64) Bopp also discloses that subsequent to melt compounding the polymer compositions may also be employed in the formation of articles using injection molding, compression molding, blow molding, structural foam molding, sheet or profile extrusion, and the like. (Bopp, col. 5, lines 58-62) By stating that injection molding, compression molding, blow molding, structural foam molding, or sheet or profile extrusion can be performed subsequent to melt compounding, one of ordinary skill in the art would understand these subsequent processes, including injection molding, are distinct from melt compounding.

Regarding melt compounding, Bopp discloses a mixture was melt compounded in an **extruder** wherein the melt temperature was about 328°C. (Bopp, col. 8, line 33) Because Bopp teaches melt compounding is distinct from injection molding, compression molding, blow molding, structural foam molding, or sheet or profile extrusion, and because Bopp teaches "in an extruder", one of ordinary skill in the art would understand a melt temperature for melt compounding to be distinct from a melt temperature for **injection molding into a mold**. Thus an artisan would not have been prompted by Bopp to provide a melt temperature for **injection molding into a mold**, or an injection molding mold temperature, let alone modify Davis in view of Bopp to provide the claimed method.

Bopp also discloses that subsequently, the resulting "micropellets" were imbibed with a blowing agent, agitated and then heated to 95°C for one hour, and then to 135°C for four hours. (Bopp, col. 8, lines 39-43) The result of Bopp's process is to transform substantially cylindrical micropellets into substantially spherical imbibed beads. (Bopp, col. 8, lines 44-46) Appellants

respectfully assert that imbibing micropellets with a blowing agent and then agitating and heating the micropellets is distinct from injection molding into a mold. Thus an artisan would not have been prompted by Bopp's disclosure of heating micropellets to 95°C and 135°C to provide an injection mold temperature of about 90 to about 130°C, let alone modify Davis to provide an injection mold temperature.

Thus Bopp does not teach any temperatures with respect to **injection molding**, let alone injection molding at a melt temperature of about 330 to about 370°C into a mold having a mold temperature of about 90 to about 130°C.

Davis does not disclose a method comprising the claimed melt temperature and mold temperature (as is admitted by the Examiner), none of Bopp, Rosato or Toshihiko remedy this deficiency of Davis, and Bopp does not teach injection molding conditions. Accordingly one of ordinary skill in the art would not have been prompted to combine Bopp and Davis in the fashion set forth in the Office Action dated February 11, 2008. Additionally, even if combined, the Appellants assert a skilled artisan would have been taught by Bopp to obtain a granulated or pelletized melt compounded product (Bopp, col. 5, line 44), and that product used to form an article by injection molding (Bopp, col. 5, line 60), which the Examiner asserts is described in Davis. (Office Action dated 02/11/08, p. 9) Bopp does not provide any teaching that would have prompted an Artisan to modify the injection molding process disclosed in Davis, or any teaching that would have prompted an Artisan to consider the claimed melt temperature and mold temperature. Thus the references do not teach or suggest all of the limitations of Claims 1 and 17.

Appellants also respectfully assert that Davis would not have prompted a skilled artisan to pick and choose various limitations from the broad disclosures of Rosato, Toshihiko, and Bopp as suggested by the Examiner. In applying Section 103, the U.S. Court of Appeals for the Federal Circuit has consistently held that one must consider both the invention and the prior art "as a whole", not from improper hindsight gained from consideration of the claimed invention. See, *Interconnect Planning Corp. v. Feil,* 227 U.S.P.Q. 543, 551 (Fed. Cir. 1985) and cases cited therein. According to the *Interconnect* court: [n]ot only must the claimed invention as a whole be evaluated, but so also must the references as a whole, so that their teachings are applied in the

context of their significance to a technician at the time - a technician without our knowledge of the solution. *Id.*

When, as here, the Section 103 rejection was based on selective combination of the prior art references to allegedly render a subsequent invention obvious, "there must be some reason for the combination other than the hind sight gleaned from the invention itself." *Id.* Stated in another way, "[i]t is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious." *In re Fritch* 23 U.S.P.Q.2d 1780, 1784 (Fed. Cir. 1992).

The Appellants respectfully assert that the Examiner has used the Appellants' disclosure to selectively combine elements from Davis, Rosato, Bopp and Toshihiko. For example Bopp discloses at least six subsequent processes and a variety of temperatures, none of which are an injection molding melt temperature or an injection molding mold temperature. Thus while Davis discloses "injection molding", it does not provide adequate direction, without hindsight, to pick and choose the requisite selected elements from among the myriad of possibilities disclosed by Bopp. Regarding Rosato, as noted in the Appellants' prior response dated November 9, 2007, Rosato discloses clamping force of "20 tons to thousands of tons". (Rosato, p. 60) Also previously noted is that Rosato discloses in Table 4-8 mold temperatures from 25°C to 230°C. It is also noted that the Examiner refers to pages 77 – 78 of Rosato as allegedly disclosing "a clamp tonnage of about 12 to about 35 tons to form the article (Page 77 – 78, Kurto/John Manufacturer)." (Examiner's Answer, page 3) The section of Rosato cited in the Examiner's Answer, however, is merely a table of Injection Molding Machines. The table lists the Manufacturer, Country of Origin, and Clamp (tons). Firstly, this is not a teaching to use a clamp tonnage of about 12 to about 35 tons to form a disk. Additionally, there is no motivation or prompting to chose Kurto/John over any of the other 63 manufacturers listed. Thirdly, Kurto/John does not disclose a clamp tonnage of about 12 to about 35, but discloses a tonnage of 25 – 35.

Again, Davis does not provide adequate direction, without hindsight, to pick and choose the requisite selected elements from the broad disclosure of Rosato, and neither does Rosato. Accordingly, considering the references as a whole, an artisan would not have arrived at the method of Claims 1 and 17 based on these references.

Also, the unexpected results shown in the application further support the non-obviousness of the claimed method. MPEP § 2144.05(III). Shown in Table 1 of the Specification as filed are the results of injection molding Examples and a Comparative Example. The Examples show a radial tilt change between 0.100 and 0.343 while the Comparative Example (CE 1) was observed to have a radial tilt change of 0.505. (Specification p. 22, Table 2) Appellants assert these unexpected results further support the non-obviousness of the claimed method.

In addition, the Appellants previously noted Rosato teaches away from the claimed molding conditions by teaching in Table 4-8 the average melt temperature of polystyrene and polyphenylene oxide is 100°C and 120°C, respectively, and a mold temperature of 45°C and 80°C, respectively. (Applicant's response dated November 9, 2007, p. 10-11) It is further noted that Rosato teaches away from the claimed clamp tonnage by teaching that "the average machine uses a range from 100 to 400 tons." (Rosato, p. 60)

Regarding Toshihiko, the Examiner references "(Para. 0008)" but has not provided an English language translation of the Toshihiko reference. The English language abstract to Toshihiko discloses a medium having an adhesive layer. (Toshihiko, Abstract) The abstract to Toshihiko does not disclose molding, let alone injection molding, or a melt temperature, or a mold temperature. Thus a skilled artisan would not have been prompted by Toshihiko to combine it with Davis, Rosato, and Bopp as suggested by the Examiner.

Regarding Claims 3 and 17, citing Paragraphs [0031], [0057], and [0058], it is alleged that Davis discloses a radial tilt change of less than or equal to 0.3. (Examiner's Answer, page 4) However, in none of these paragraphs does Davis mention a radial tilt *change*. In Paragraph [0031], Davis discusses a maximum radial and tangential tilt, measured at resting state. Davis does not discuss radial tilt change as is presently claimed. Furthermore, Paragraphs [0057] and [0058] of Davis do not even mention "tilt". These paragraphs are directed to methods for producing the storage media. It is also noted that it would not have been obvious to use Toshihiko's radial tilt measuring parameters in Davis, including for the reason that Davis does not measure a change in radial tilt.

With respect to Claims 4 and 5, allegedly, "Davis shows the process as claimed..., including a method wherein the melt temperature is 328C, i.e. about 340 (Column 8, lines 32-33)... [and] the mold temperature is 135C, i.e. about 120°C (Column 8, lines 40-44)..."

(Examiner's Answer, pages 4 - 5). However, Davis is a published application that is not set up with numbered columns, it is arranged by paragraph. At the 8th column, lines 32 – 33, Davis is discussing foamed and honeycombed structures, not melt temperatures. Furthermore, nowhere in Davis are the temperatures "328°C" or "340°C" mentioned. Additionally, at lines 40 – 44, Davis is discussing modulus of elasticity and materials to improve damping characteristics. Davis does not mention mold temperatures of 135°C or 120°C.

Regarding Claim 6, the Examiner alleges that Rosato "shows a method wherein the clamp tonnage is of about 15 to 30 tons". (Office Action dated 02/11/2008, p. 3)

Claim 6 recites the method of Claim 1, wherein the clamp tonnage is of about 15 to about 30 tons. Claim 17 also recites this clamp tonnage.

The Supreme Court recently held that "A patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR International Co. v. Teleflex Inc.,* 127 S. Ct. 1727, 1741 (2007). To find obviousness, the Examiner must "identify a reason that would have prompted a person of ordinary skill in the art in the relevant field to combine the elements in the way the claimed new invention does." *Id.*

Rosato discloses about 109 clamp tonnage ranges that span 5 to 7,000 tons. (Rosato, p. 77-78, Table 2-3) The Examiner has not articulated any reason why an artisan would have been prompted to consider any particular clamp tonnage within the broad disclosure of clamp tonnage provided by Rosato. In fact, based upon the disclosure of Rosato, a skilled artisan would have been prompted to consider a clamp tonnage of from 100 to 400 tons because Rosato teaches that "the average machine uses a range from 100 to 400 tons." (Rosato, p. 60)

Accordingly, the Appellants assert that Rosato does not represent an enabling disclosure from which a skilled artisan would have been prompted to select a clamp tonnage of 12 to 35 tons, as is recited in Claims 1 and 17, or 15 to 30 tons, as is recited in Claim 6, in view of Rosato.

Thus Davis in view of Rosato, Toshihiko and Bopp fail to disclose all of the limitations of the instant claims, fail to teach or suggest the invention, and fail to provide a prompting to combine the references in the fashion suggested by the Examiner in the Office Action dated 02/11/2008. Thus, for at least these reasons, the independent Claims 1 and 17 are allowable over

Davis, Rosato, Toshihiko and Bopp. Claims 3 – 6, and 15 – 16 depend from Claim 1, thus are also allowable for at least these reasons, as well as for additional reasons set forth herein.

It is noted that Claim 8 is discussed in the Examiner' Answer. However, Claim 8 has not been rejected over Davis in view of Rosato, Toshihiko and Bopp, and therefore is not addressed herein.

Accordingly, reconsideration and reversal of the rejection are respectfully requested.

B. CLAIMS 18 - 20, 23, 24, AND 31 - 32 ARE NON-OBVIOUS OVER DAVIS IN VIEW OF ROSATO, TOSHIHIKO, BOPP, AND OHKAWA.

In the Final Office Action the Examiner admits Davis does not show testing the articles for percent feature replication but asserts Ohkawa discloses the testing procedures. (Office Action dated 02/11/2008, p. 5)

Claim 18 claims a method of molding a disk, comprising: **injection molding** a poly(arylene ether) and poly(alkenyl aromatic) material to form disks according to a molding model comprising **molding parameters** and molding parameter values to achieve molded disks having specific properties of feature replication and radial tilt change when prepared into disk assemblies.

Davis, Rosato, Toshihiko, Bopp and Ohkawa fail to teach or suggest **injection molding** according to a molding model comprising molding parameters, testing the resulting disks, updating the molding model, and repeating until the molding parameters of the resulting molding model results in the fabrication of disk assemblies exhibiting a radial tilt change value after aging of less than or equal to about 0.35 degree measured at a radius of 55 millimeters and a percent feature replication of greater than or equal to about 90 percent. As discussed above, none of Davis, Rosato, Toshihiko, or Bopp teach or suggest the importance of molding conditions on the claimed properties of the resulting disk or disk assemblies. Additionally, contrary to the Examiner's Answer, Davis does not discuss radial tilt change, but discusses radial tilt.

Ohkawa fails to cure the many deficiencies of Davis, Rosato, Toshihiko, and Bopp, as Ohkawa does not teach or suggest injection molding. Ohkawa is relied upon to allegedly "show that it is known to carry out a method comprising testing the disks for percent feature replication; creating an updated molding model based upon the mold parameter values…; and repeating the

molding, testing, and creating steps until final disks exhibit a percent feature replication of greater than or equal to 90 percent (Col. 12, lines 66-67; Col. 13, lines 1-11, 45-67; Col. 14, lines 1-2). (Examiner's Answer, page 7) Firstly, Ohkawa is not directed to disks and does not motivate or prompt one to do anything with relation to disks. Ohkawa is directed to particular resin compositions, namely comprising actinic radical curable and cationically polymerizable organic substance and an actinic radiation-sensitive initiator for cationic polymerization. (Abstract) The composition is described as "applicable to the preparation of models of various articles having curved surfaces, such as automobile, electronic or electrical component, furniture, structural component for building, toy, container, casting and doll." (Col. 13, lines 12 – 16) Ohkawa does not disclose a method for making disks that exhibit a greater than or equal to 90 percent replication. The sections cited in the Examiner's Answer are directed toward using the particular resin composition to make models (Col. 13, lines 1-11), and toward characteristics of the resin composition. (Col. 13, lines 45 to Col. 14, line 2) Hence, Ohkawa fails to remedy the deficiencies of Davis, Rosato, Toshihiko, and Bopp, and fails to provide motivation or prompting to make the modifications suggested by the Examiner.

Thus, based on the teachings of Davis, Rosato, Toshihiko, Bopp, and Ohkawa, one of ordinary skill in the art would not have been prompted to consider molding parameters, let alone injection molding melt temperature or injection molding mold temperature, as the means to obtain a disk assembly having particular physical properties such as reduced radial tilt change, at least because neither of these references teach or suggest the importance of the injection molding parameters to disk properties, such as dimensional stability.

Thus Claim 18 is patentable over Davis, Rosato, Toshihiko, Bopp and Ohkawa. Claims 19, 20, 23, 24, 31, and 32 depend from Claim 18, and thus are patentable for at least these reasons. It is further noted that in failing to teach the elements of Claim 18, these references fail to teach the many further patented distinctions of the dependent claims, including testing parameters (Claims 19 and 20), molding parameters (Claim 27), radial tilt change (Claim 20), replication (Claim 23), and poly(arylene ether) composition. They also fail to teach the novel, patentably distinct disks and data storage assembly formed from the method of Claim 18. (Claims 31 and 32) As is discussed in detail above, Davis does not disclose a radial tilt change, and there is no reason to use the method in Toshihiko as suggested in the Examiner's Answer.

Accordingly, Appellants respectfully request reconsideration and reversal of the rejections to Claims 18 – 20, 23, 24, 31, and 32.

C. CLAIMS 10 AND 14 ARE NON-OBVIOUS OVER DAVIS IN VIEW OF ROSATO, BOPP, TOSHIHIKO, AND ADEDEJI.

In the Final Office Action, the Examiner admits Davis does not show using a specific polymeric structure or molding composition but asserts it would have been obvious to use the specific polymeric structure of Adedeji in an amount disclosed by Adedeji in the molding process of Davis. (Office Action dated 02/11/2008, p. 6-7)

Adedeji discloses molding a poly(arylene ether) at a barrel temperature of 450-550° F (232-287° C) and a mold temperature of 100-120°F (38-49°C). (Adedeji, p. 8, [0090])

Claims 10 and 14 depend from Claim 1. Claim 1 claims a method comprising injection molding into a mold having a mold temperature of about 90 to about 130°C.

Adedeji, by teaching a mold temperature of 100-120°F (38-49°C) does not remedy the deficiencies of Davis, Rosato, Toshihiko and Bopp. By teaching molding of a poly(arylene ether) at a mold temperature of 100-120°F (38-49°C) Adedeji teaches away from molding a poly(arylene ether) at about 90 to about 130°C. Thus Adedeji teaches away from the claimed method, which claims a mold temperature of about 90 to about 130°C. In addition, Adedeji does not teach injection molding a polymeric material at a melt temperature of about 330 to about 370°C **into a mold**, nor does Adedeji teach a clamp tonnage of about 12 to about 35 tons to form a disk.

Adedeji is relied upon to allegedly teach the presently claimed structure. However even if Adedeji discloses the structure, Adedeji will be disclosing it to be used at a molding temperature well below that presently claimed. Furthermore, there is no motivation or prompting to chose the specific material of Adedeji for use in the disk of Davis.

Thus Adedeji, at best, teaches away from the presently claimed molding temperatures, and does not remedy the deficiencies of Davis, Rosato, Toshihiko and Bopp. Accordingly Claims 10 and 14 are patentable over Davis, Rosato, Toshihiko, and Bopp in view of Adedeji.

Reconsideration and reversal of these rejections over Claims 10 and 14 are respectfully requested.

D. CLAIM 11 IS NON-OBVIOUS OVER DAVIS IN VIEW OF ROSATO, TOSHIHIKO, BOPP, AND FORTUYN.

In the Final Office Action, the Examiner admits Davis does not show using a polymer with a specific viscosity but asserts Fortuyn discloses a polyarylene ether with intrinsic viscosity of about 0.10 to about 0.60 deciliters per gram and that it would have been obvious to use a material with Fortuyn's viscosity in the molding process of Davis. (Office Action dated 02/11/2008, p. 7)

Claim 11 depends from Claim 1, which is patentable over Davis, Rosato, Toshihiko and Bopp at least for the reasons set forth above. Fortuyn does not remedy the deficiencies of Davis, Rosato, Toshihiko and Bopp. Fortuyn discloses a pre-blend that can be heated to about 250°C to 350°C and the melted pre-blend can be **extruded** and then chopped, cut or ground into a smaller size. (Fortuyn, col. 6, lines 20-24) It is further noted that Fortuyn discloses that the extruded material can subsequently be injection molded at a temperature of about 250°C to 320°C. (Fortuyn, col. 6, lines 24-25) However, Fortuyn does not disclose or suggest injection molding a polymeric material at a melt temperature of about 330 to about 370°C **into a mold** having a mold temperature of about 90 to about 130°C and a clamp tonnage of about 12 to about 35 tons to form a disk. Thus Fortuyn fails to disclose injection molding a poly(arylene ether) under those conditions. Because Fortuyn does not remedy the deficiencies of Davis, Rosato, Toshihiko, and Bopp, Claim 11 is patentable over Davis, Rosato, Toshihiko, and Bopp in view of Fortuyn.

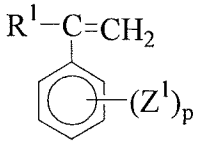
Reconsideration and reversal of the rejection are respectfully requested.

E. CLAIM 12 IS NON-OBVIOUS OVER DAVIS IN VIEW OF ROSATO, TOSHIHIKO, BOPP, AND ALLEN.

In the Final Office Action, the Examiner admits Davis does not show a specific polyalkenyl aromatic but states it would have been obvious to use Allen's specific polymeric structure in Davis' molding process. (Office Action 02/11/2008, p. 7)

Claim 12 depends from Claim 1, which is patentable over Davis, Rosato, Toshihiko, and Bopp. Claim 12 recites a method of molding a disk, wherein the poly(alkenyl aromatic) contains

at least 25% by weight of structural units derived from an alkenyl aromatic monomer of the formula:



Allen discloses low density particles of polyphenylene ether by incorporation of a blowing agent into a resin mixture, followed by expansion of the resin particles. (Allen, Abstract) Allen discloses thermoplastic extrusion of strands, which can be pelletized. (Allen, col. 4, lines 57-64) Allen also discloses use of blowing agents in an autoclave. (Allen col. 5, lines 52-57) Allen does not disclose or suggest injection molding.

Allen does not remedy the deficiencies of Davis, Rosato, Toshihiko and Bopp. Allen discloses heating in an autoclave at 90°C. (Allen, col. 5, line 54) Allen also discloses extrusion at 275°C. (Allen, col. 6, line 58) Allen does not teach or suggest injection molding a polymeric material at a melt temperature of about 330 to about 370°C **into a mold** having a mold temperature of about 90 to about 130°C and a clamp tonnage of about 12 to about 35 tons to form a disk. Because Allen does not teach injection molding, let alone injection molding a polymeric material at a melt temperature of about 330 to about 370°C into a mold having a mold temperature of about 90 to about 130°C, a skilled artisan would not have been prompted to combine Allen with Davis, Rosato, Toshihiko, and Bopp as suggested by the Examiner. Therefore, because Allen does not remedy the deficiencies of Davis, Rosato, Toshihiko and Bopp, Claim 12 is patentable over Davis, Rosato, Toshihiko, and Bopp in view of Allen.

Reconsideration and reversal of the rejection are respectfully requested.

F. CLAIM 13 IS NON-OBVIOUS OVER DAVIS IN VIEW OF ROSATO, TOSHIHIKO, BOPP, AND CHEUNG.

In the Final Office Action, the Examiner admits Davis does not disclose "a specific polyalkenyl aromatic" but asserts Cheung discloses a method wherein the polyalkenyl aromatic is "atactic crystal polystyrene". (Office Action 02/11/2008, p. 8)

Claim 13 depends from Claim 1, which is patentable over Davis, Rosato, Toshihiko, and Bopp. Claim 13 recites a method of molding a disk wherein the poly(alkenyl aromatic) is atactic crystal polystyrene.

Cheung discloses random "interpolymers", which are polymers of three or more different monomers. (Cheung, col. 2, lines 48-50) Cheung discloses interpolymers comprising ethylene, one or more aromatic vinylidene monomers or hindered aliphatic or cycloaliphatic vinylidene monomers, and one or more olefinic monomers. (Cheung, Abstract) It is further noted that, in Examples 1-10, Cheung discloses that the atactic polystyrene content was determined for the ethylene/styrene/α-olefin terpolymers that were prepared. (Cheung, col. 7, lines 37-38, Table 2). However, nowhere does Cheung disclose or suggest that the atactic polystyrene contained in Cheung's terpolymers is atactic **crystal** polystyrene.

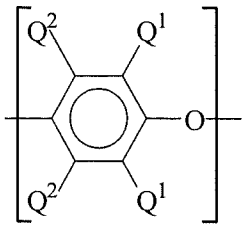
Cheung does not remedy the deficiencies of Davis, Rosato, Toshihiko, and Bopp. Cheung teaches compression molding at 190°C. (Cheung, col. 8, lines 9-10) Cheung does not teach or suggest injection molding a polymeric material at a melt temperature of about 330 to about 370°C **into a mold** having a mold temperature of about 90 to about 130°C and a clamp tonnage of about 12 to about 35 tons to form a disk. Because Cheung does not remedy the deficiencies of Davis, Rosato, Toshihiko, and Bopp, Claim 13 is patentable over Davis, Rosato, Toshihiko, and Bopp in view of Cheung.

Reconsideration and reversal of the rejection are respectfully requested.

G. CLAIM 27 IS NON-OBVIOUS OVER DAVIS IN VIEW OF ROSATO, TOSHIHIKO, BOPP, OHKAWA, AND SINGH.

In the Final Office Action, the Examiner asserts it would have been obvious to use the specific polymeric structure of Singh in the molding process of Davis. (Office Action dated 02/11/2008, p. 8)

Claim 27 depends from Claim 18, which is patentable over Davis, Rosato, Toshihiko, Bopp, and Ohkawa. Claim 27 recites a method of molding a disk wherein the poly(arylene ether) comprises a plurality of structural units of the structure:



Claim 18 recites **injection molding** according to molding model comprising molding parameters, testing the resulting disks, updating the molding model, and repeating until the molding parameters of the resulting molding model results in the fabrication of disk assemblies exhibiting a radial tilt change value after aging of less than or equal to about 0.35 degree measured at a radius of 55 millimeters and a percent feature replication of greater than or equal to about 90 percent.

Singh does not remedy the deficiencies of Davis, Rosato, Toshihiko, Bopp, and Ohkawa. Singh discloses a method of preparing a poly(arylene ether). (Singh, col. 2, line 61) Singh does not disclose molding, let alone injection molding. Thus Singh does not teach or suggest **injection molding** according to a molding model comprising molding parameters, testing the resulting disks, updating the molding model, and repeating until the molding parameters of the resulting molding model results in the fabrication of disk assemblies exhibiting a radial tilt change value after aging of less than or equal to about 0.35 degree measured at a radius of 55 millimeters and a percent feature replication of greater than or equal to about 90 percent, as is claimed by the Appellants. Because Singh does not remedy the deficiencies of Davis, Rosato, Toshihiko, Bopp, and Ohkawa, Claim 27 is patentable over Davis, Rosato, Bopp, Toshihiko, Ohkawa, and Singh.

Reconsideration and reversal of the rejection are respectfully requested.

H. CLAIM 28 IS NON-OBVIOUS OVER DAVIS IN VIEW OF ROSATO, TOSHIHIKO, BOPP, OHKAWA, AND FORTUYN.

In the Final Office Action, the Examiner admits Davis does not show using a polymer with a specific viscosity but asserts Fortuyn discloses a polyarylene ether with intrinsic viscosity of about 0.10 to about 0.60 deciliters per gram and that it would have been obvious to use a material with Fortuyn's viscosity in the molding process of Davis. (Office Action dated 02/11/2008, p. 8)

Claim 28 depends from Claim 18, which is patentable over Davis, Rosato, Toshihiko, Bopp, and Ohkawa. Claim 28 recites a method of molding a disk wherein the poly(arylene ether) has an intrinsic viscosity of about 0.10 to about 0.60 deciliters per gram. Claim 18 recites injection molding according to molding model comprising molding parameters, testing the resulting disks, updating the molding model, and repeating until the molding parameters of the resulting molding model results in the fabrication of disk assemblies exhibiting a radial tilt change value after aging of less than or equal to about 0.35 degree measured at a radius of 55 millimeters and a percent feature replication of greater than or equal to about 90 percent.

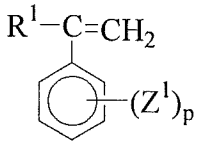
Fortuyn discloses thermoplastic compositions comprising poly(arylene ether). (Fortuyn col. 1, lines 53-54) Fortuyn does not remedy the deficiencies of Davis, Rosato, Toshihiko, Bopp, and Ohkawa. Fortuyn discloses a pre-blend can be heated to about 250°C to 350°C and the melted pre-blend can be **extruded** and then chopped, cut or ground into a smaller size. (Fortuyn, col. 6, lines 20-24) It is further noted that Fortuyn discloses that the extruded material can subsequently be injection molded at a temperature of about 250°C to 320°C. (Fortuyn, col. 6, lines 24-25) However, Fortuyn does not disclose or suggest injection molding according to a molding model comprising molding parameters, testing the resulting disks, updating the molding model, and repeating until the molding parameters of the resulting molding model results in the fabrication of disk assemblies exhibiting a radial tilt change value after aging of less than or equal to about 0.35 degree measured at a radius of 55 millimeters and a percent feature replication of greater than or equal to about 90 percent. Because Fortuyn does not remedy the deficiencies of Davis, Rosato, Toshihiko, Bopp, and Ohkawa, Claim 28 is patentable over Davis, Rosato, Bopp, Toshihiko, Ohkawa, and Fortuyn.

Reconsideration and reversal of the rejection are respectfully requested.

I. CLAIM 29 IS NON-OBVIOUS OVER DAVIS IN VIEW OF ROSATO, TOSHIHIKO, BOPP, OHKAWA, AND ALLEN.

In the Final Office Action, the Examiner admits Davis does not show a specific polyalkenyl aromatic but states it would have been obvious to use Allen's specific polymeric structure in Davis' molding process. (Office Action 02/11/2008, p. 8)

Claim 29 depends from Claim 18, which is patentable over Davis, Rosato, Toshihiko, Bopp, and Ohkawa. Claim 29 recites a method of molding a disk, wherein the poly(alkenyl aromatic) contains at least 25% by weight of structural units derived from an alkenyl aromatic monomer of the formula:



Claim 18 recites injection molding according to molding model comprising molding parameters, testing the resulting disks, updating the molding model, and repeating until the molding parameters of the resulting molding model results in the fabrication of disk assemblies exhibiting a radial tilt change value after aging of less than or equal to about 0.35 degree measured at a radius of 55 millimeters and a percent feature replication of greater than or equal to about 90 percent.

Allen discloses low density particles of polyphenylene ether by incorporation of a blowing agent into a resin mixture, followed by expansion of the resin particles. (Allen, Abstract) Allen discloses thermoplastic extrusion of strands, which can be pelletized. (Allen, col. 4, lines 57-64) Allen also discloses use of blowing agents in an autoclave. (Allen col. 5, lines 52-57) Allen does not disclose or suggest injection molding.

Allen does not remedy the deficiencies of Davis, Rosato, Toshihiko, Bopp, and Ohkawa. Allen teaches heating in an autoclave at 90°C. (Allen, col. 5, line 54) Allen does not disclose or suggest **injection molding** according to a multi-step molding model comprising molding parameters, testing the resulting disks, updating the molding model, and repeating until the molding parameters of the resulting molding model results in the fabrication of disk assemblies exhibiting a radial tilt change value after aging of less than or equal to about 0.35 degree measured at a radius of 55 millimeters and a percent feature replication of greater than or equal to about 90 percent. Because Allen does not remedy the deficiencies of Davis, Rosato, Toshihiko, Bopp, and Ohkawa, Claim 29 is patentable over Davis, Rosato, Bopp, Toshihiko, Ohkawa, and Allen.

Reconsideration and reversal of the rejection are respectfully requested.

J. CLAIM 30 IS NON-OBVIOUS OVER DAVIS IN VIEW OF ROSATO, TOSHIHIKO, BOPP, OHKAWA AND ADEDEJI.

In the Final Office Action, the Examiner admits Davis does not show using a specific molding composition but asserts it would have been obvious to use the specific polymer of Adedeji in an amount disclosed by Adedeji in the molding process of Davis. (Office Action dated 02/11/2008, p. 9)

Claim 30 depends from Claim 18, which is patentable over Davis, Rosato, Toshihiko Bopp and Ohkawa. Claim 30 recites a method of molding a disk wherein the poly(arylene ether) is present in the polymeric material in an amount of about 90 to about 10 percent by weight and the poly(alkenyl aromatic) is present in the polymeric material in an amount of about 10 to about 90 percent by weight based on the total weight of the poly(arylene ether) and the poly(alkenyl aromatic). Claim 18 recites injection molding according to molding model comprising molding parameters, testing the resulting disks, updating the molding model, and repeating until the molding parameters of the resulting molding model results in the fabrication of disk assemblies exhibiting a radial tilt change value after aging of less than or equal to about 0.35 degree measured at a radius of 55 millimeters and a percent feature replication of greater than or equal to about 90 percent.

Adedeji does not remedy the deficiencies of Davis, Rosato, Toshihiko, Bopp, and Ohkawa. Adedeji discloses a thermoplastic composition comprising 15 to 35 weight percent of a poly(arylene ether), 15 to 46 percent of a homopolymer of an alkenyl aromatic monomer and 1 to 15 percent of a hydrogenated block copolymer of an alkenyl aromatic and a conjugated diene. (Adedeji p. 1, ¶[0014]) Adedeji also discloses molding at a mold temperature of 100-120°F (38-49°C). (Adedeji, p. 8, [0090]) Adedeji does not disclose or suggest **injection molding** according to a molding model comprising molding parameters, testing the resulting disks, updating the molding model, and repeating until the molding parameters of the resulting molding model results in the fabrication of disk assemblies exhibiting a radial tilt change value after aging of less than or equal to about 0.35 degree measured at a radius of 55 millimeters and a percent feature replication of greater than or equal to about 90 percent. Because Adedeji does not remedy the deficiencies of Davis, Rosato, Toshihiko, Bopp, and Ohkawa, Claim 30 is patentable over Davis, Rosato, Bopp, Toshihiko, Ohkawa, and Adedeji.

Reconsideration and reversal of the rejection are respectfully requested.

In the event the Examiner has any queries regarding the submitted arguments, the undersigned respectfully requests the courtesy of a telephone conference to discuss any matters in need of attention.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 50-1131.

Respectfully submitted,

CANTOR COLBURN LLP

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VIII. CLAIMS APPENDIX

1. (Previously Presented) A method of molding a disk, comprising injection molding a polymeric material at a melt temperature of about 330 to about 370°C into a mold having a mold temperature of about 90 to about 130°C and a clamp tonnage of about 12 to about 35 tons to form a disk;

wherein the polymeric material comprises poly(arylene ether) and poly(alkenyl aromatic);

wherein the disk exhibits a percent feature replication of greater than or equal to about 90 percent; and

wherein a disk assembly fabricated from the disk exhibits a radial tilt change value after 96 hours at 80°C of less than or equal to about 0.35 degree measured at a radius of 55 millimeters.

3. (Original) The method of claim 1, wherein a disk assembly fabricated from the disk exhibits a radial tilt change value after 96 hours at 80°C of less than or equal to about 0.15 degree measured at a radius of 55 millimeters.

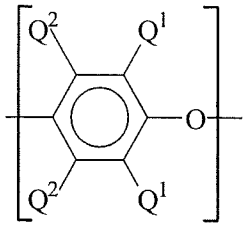
4. (Original) The method of claim 1, wherein the melt temperature is of about 340 to about 360°C.

5. (Original) The method of claim 1, wherein the mold temperature is of about 100 to about 120°C.

6. (Original) The method of claim 1, wherein the clamp tonnage is of about 15 to about 30 tons.

8. (Original) The method of claim 1, wherein the disk exhibits a percent feature replication of greater than or equal to about 95 percent.

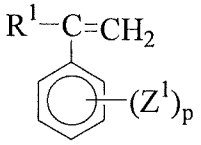
10. (Previously Presented) The method of claim 1, wherein the poly(arylene ether) comprises a plurality of structural units of the structure



wherein for each structural unit, each Q^1 is independently halogen, primary or secondary C_1-C_7 alkyl, phenyl, haloalkyl, aminoalkyl, hydrocarbonoxy, or halohydrocarbonoxy wherein at least two carbon atoms separate the halogen and oxygen atoms; and each Q^2 is independently hydrogen, halogen, primary or secondary lower alkyl, phenyl, haloalkyl, hydrocarbonoxy, or halohydrocarbonoxy wherein at least two carbon atoms separate the halogen and oxygen atoms.

11. (Previously Presented) The method of claim 1, wherein the poly(arylene ether) has an intrinsic viscosity of about 0.10 to about 0.60 deciliters per gram as measured in chloroform at 25°C.

12. (Previously Presented) The method of claim 1, wherein the poly(alkenyl aromatic) contains at least 25% by weight of structural units derived from an alkenyl aromatic monomer of the formula



wherein R^1 is hydrogen, C_1-C_8 alkyl, or halogen; Z^1 is vinyl, halogen or C_1-C_8 alkyl; and p is 0 to 5.

13. (Previously Presented) The method of claim 1, wherein the poly(alkenyl aromatic) is atactic crystal polystyrene.

14. (Previously Presented) The method of claim 1, wherein the poly(arylene ether) is present in the polymeric material in an amount of about 60 to about 40 percent by weight and the poly(alkenyl aromatic) is present in the polymeric material in an amount of about 40 to about 60 percent by weight based on the total weight of the poly(arylene ether) and the poly(alkenyl aromatic).

15. (Original) The method of claim 1, wherein the disk is a data storage disk.

16. (Original) A laminate data storage assembly fabricated from a disk formed by the method of claim 1.

17. (Previously Presented) A method of molding a disk, comprising injection molding a polymeric material at a melt temperature of about 330 to about 370°C into mold having a mold temperature of about 90 to about 130°C and a clamp tonnage of about 12 to about 35 tons to form a disk, wherein the polymeric material comprises poly(2,6-dimethyl-1,4-phenylene oxide) and polystyrene;

wherein a disk assembly fabricated from the disk exhibits a radial tilt change value after 96 hours at 80°C of less than or equal to about 0.35 degree measured at a radius of 55 millimeters; and

wherein the disk exhibits a percent feature replication of greater than or equal to about 90 percent.

18. (Previously Presented) A method of molding a disk, comprising:

addition molding a polymeric material to form disks according to a molding model comprising molding parameters and molding parameter values;

testing disk assemblies fabricated from the disks for radial tilt change;

creating an updated molding model based on the molding parameter values that resulted in disk assemblies fabricated from the disks having a radial tilt change within a selected range of values; and

repeating the molding, testing and creating steps to form final disks and a final molding model;

testing the disks for percent feature replication;

creating the updated molding model based on the molding parameter values that resulted in disks exhibiting a percent feature replication within a selected range of values; and

repeating the molding, testing and creating steps until the final disks exhibit a percent feature replication of greater than or equal to about 90 percent,

wherein disk assemblies fabricated from the final disks exhibit a radial tilt change value after aging of less than or equal to about 0.35 degree measured at a radius of 55 millimeters; and

wherein the polymeric material comprises poly(arylene ether) and poly(alkenyl aromatic).

19. (Original) The method of claim 18, wherein the testing comprises aging the disk assemblies at 80°C for 96 hours.

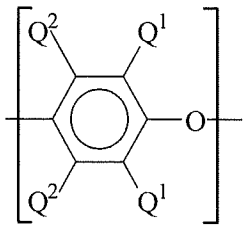
20. (Original) The method of claim 18, wherein the disk assemblies fabricated from the final disks exhibit a radial tilt change value after 96 hours at 80°C of less than or equal to about 0.35 degree measured at a radius of 55 millimeters.

21. (Original) The method of claim 18, wherein the disk assemblies fabricated from the final disks exhibit a radial tilt change value after 96 hours at 80°C of less than or equal to about 0.15 degree measured at a radius of 55 millimeters.

23. (Previously Presented) The method of claim 18, wherein the final disks exhibit a percent feature replication of greater than or equal to about 95%.

24. (Original) The method of claim 18, wherein the molding parameters are melt temperature, mold temperature, clamp tonnage, hold pressure, cool time, or a combination thereof.

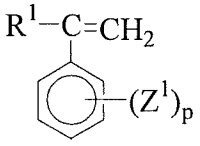
27. (Previously Presented) The method of claim 18, wherein the poly(arylene ether) comprises a plurality of structural units of the structure



wherein for each structural unit, each Q^1 is independently halogen, primary or secondary C_1-C_7 alkyl, phenyl, haloalkyl, aminoalkyl, hydrocarbonoxy, or halohydrocarbonoxy wherein at least two carbon atoms separate the halogen and oxygen atoms; and each Q^2 is independently hydrogen, halogen, primary or secondary lower alkyl, phenyl, haloalkyl, hydrocarbonoxy, or halohydrocarbonoxy wherein at least two carbon atoms separate the halogen and oxygen atoms.

28. (Previously Presented) The method of claim 18, wherein the poly(arylene ether) has an intrinsic viscosity of about 0.10 to about 0.60 deciliters per gram as measured in chloroform at 25°C.

29. (Previously Presented) The method of claim 18, wherein the poly(alkenyl aromatic) contains at least 25% by weight of structural units derived from an alkenyl aromatic monomer of the formula



wherein R^1 is hydrogen, C_1-C_8 alkyl, or halogen; Z^1 is vinyl, halogen or C_1-C_8 alkyl; and p is 0 to 5.

30. (Previously Presented) The method of claim 18, wherein the poly(arylene ether) is present in the polymeric material in an amount of about 90 to about 10 percent by weight and the poly(alkenyl aromatic) is present in the polymeric material in an amount of about 10 to about 90 percent by weight based on the total weight of the poly(arylene ether) and the poly(alkenyl aromatic).

31. (Original) A data storage disk formed by the method of claim 18.

32. (Original) A laminate data storage assembly fabricated from the final disk formed by the method of claim 18.

IX. EVIDENCE APPENDIX

There is no evidence submitted pursuant to 37 C.F.R. §1.130, 37 C.F.R. §1.131, or 37 C.F.R. §1.132 or any other evidence entered by the Examiner and relied upon by the Appellant in this appeal, known to the Appellants, Appellants' legal representatives, or assignee.

[NONE]

X. RELATED PROCEEDING APPENDIX

There are no other related appeals or interferences known to Appellants, Appellants' legal representatives, or assignee that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

[NONE]